

**Appl. No. 10/712,829**  
**Amdt. dated January 29, 2007**  
**Reply to Office Action of November 21, 2006**

**Amendments to the Claims:**

Listing of Claims

1. (Original) A method for reducing levels of residual halogen and Group IIIb metals in a crude poly( $\alpha$ -olefin) polymerized in the presence of a catalyst comprising the halogen and Group IIIb metals, wherein the method comprises:
  - A) washing the crude poly( $\alpha$ -olefin) with water;
  - B) separating the aqueous and organic phases;
  - C) then adding an adsorbent selected from the group consisting of magnesium silicates, calcium silicates, aluminum silicates, aluminum oxides, and clays to the organic phase to form a slurry;
  - D) heating the slurry under reduced pressure at a temperature of at least about 180° C for at least about thirty minutes; and then
  - E) separating the adsorbent from the slurry.
2. (Original) The method of claim 1 wherein the halogen is selected from the group consisting of chlorine, bromine, and mixtures thereof.
3. (Original) The method of claim 2 wherein the halogen is bromine.
4. (Original) The method of claim 1 wherein the Group IIIb metal is aluminum
5. (Original) The method of claim 1 wherein the adsorbent is a magnesium silicate.

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6. (Original) The method of claim 1 wherein the heating step is continued for at least about 90 minutes.
7. (Original) The method of claim 1 wherein the heating step is continued for at least about 180 minutes.
8. (Original) The method of claim 1 wherein the adsorbent is employed at a level of at least about 0.4 eq. metal/ eq. halogen.
9. (Original) The method of claim 1 wherein the adsorbent is separated from the slurry by filtration.
10. (Original) A method for reducing levels of residual bromine and aluminum in a crude poly( $\alpha$ -olefin) polymerized in the presence of a catalyst comprising the bromine and aluminum, wherein the method comprises:
- A) washing the crude poly( $\alpha$ -olefin) with water;
  - B) separating the aqueous and organic phases;
  - C) then adding about 0.4 eq. Mg/ eq. halogen of a magnesium silicate to the organic phase to form a slurry;
  - D) heating the slurry under reduced pressure at a temperature of at least about 180° C for at least about ninety minutes; and then
  - E) filtering the magnesium silicate from the slurry.

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11. (New) A method for reducing levels of residual halogen and Group IIIb metals in a crude poly( $\alpha$ -olefin) polymerized in the presence of a catalyst comprising the halogen and Group IIIb metals, wherein the method comprises:

- A) washing the crude poly( $\alpha$ -olefin) with water;
- B) separating the aqueous and organic phases;
- C) then adding an adsorbent selected from the group consisting of magnesium silicates, calcium silicates, and aluminum silicates to the organic phase to form a slurry;
- D) heating the slurry under reduced pressure at a temperature of at least about 180° C for at least about thirty minutes; and then
- E) separating the adsorbent from the slurry.

12. (New) The method of claim 11 wherein the halogen is selected from the group consisting of chlorine, bromine, and mixtures thereof.

13. (New) The method of claim 12 wherein the halogen is bromine.

14. (New) The method of claim 11 wherein the Group IIIb metal is aluminum

15. (New) The method of claim 11 wherein the adsorbent is a magnesium silicate.

16. (New) The method of claim 11 wherein the heating step is continued for at least about 90 minutes.

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17. (New) The method of claim 11 wherein the heating step is continued for at least about 180 minutes.
18. (New) The method of claim 11 wherein the adsorbent is employed at a level of at least about 0.4 eq. metal/ eq. halogen.
19. (New) The method of claim 11 wherein the adsorbent is separated from the slurry by filtration.
20. (New) The method of claim 14 wherein the adsorbent is a magnesium silicate.